MANUFACTURING

NUMBERS:

9700465
9700475

Antunes Filtration Technologies

WATER FILTRATION SYSTEM

UFL-420/440 Series

System Tested and Certified by NSF International and WQA against NSF/ANSI Standard 42 and 53 for the reduction of:

Standard No. 42: Aesthetic Effects
Nominal Particulate Reduction Class I
Standard No. 53: Health Effects
Cyst Reduction
Turbidity Reduction.

P/N 1011055 11/09

Owner's Manual

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OWNER INFORMATION

General

Antunes Filtration Technologies, Division of A.J. Antunes & Co., has partnered with companies from around the globe to produce the UFL Series water filtration systems. The UFL Series reduces cysts and turbidity that can enter a typical water supply. This patented technology is now available to you, sized for your particular application. All filter configurations utilize NeoH capillary membranes, providing the latest innovation in reusable surface filtration technology.

This manual provides the safety, installation and operating procedures for the UFL Series water filtration systems. We recommend that all information contained in this manual be read prior to installing and operating the unit.

Your UFL Series unit is manufactured from the finest materials available and is assembled to AFT's strict quality standards. This unit has been tested at the factory to ensure dependable trouble-free operation.

Warranty Information

Please read the full text of the Limited Warranty in this manual.

If the unit arrives damaged, contact the carrier immediately and file a damage claim with them. Save all packing materials when filing a claim. Freight damage claims are the responsibility of the purchaser and are not covered under warranty.

The warranty does NOT extend to:

- Damages caused in shipment or damage as result of improper use.
- Installation of electrical service.
- Normal maintenance as outlined in this manual.
- Malfunction resulting from improper maintenance.
- Damage from moisture leaking into electrical components.
- Normal maintenance as outlined in this manual.
- Damage from tampering with, removal of, or changing any preset control or safety device.

IMPORTANT! Keep these instructions for future reference. If the unit changes ownership, be sure this manual accompanies the equipment.

OWNER INFORMATION (continued)

Service/Technical Assistance

If you experience any problems with the installation or operation of your unit, contact Antunes Filtration Technologies at **1-630-784-1000**, or toll free in the United States at **1-800-253-2991**.

Fill in the information in the next column and have it handy when calling for assistance. The serial number is on the specification plate located on the unit.

Purchased From: _____

Date of Purchase: _____

Model No.: _____

Serial No.: _____

Mfg. No.: _____

Suggested replacement period for Ultra Filter Cartridge is approximately 3 years.

For sales in the state of Iowa:

Seller: _____ Date: _____

Buyer: _____ Date: _____

IMPORTANT

A.J. Antunes and Co. reserves the right to change specifications and product design without notice. Such revisions do NOT entitle the buyer to corresponding changes, improvements, additions or replacements for previously purchased equipment.

IMPORTANT SAFETY INFORMATION

In addition to the warnings and cautions in this manual, use the following guidelines for safe operation of the unit:

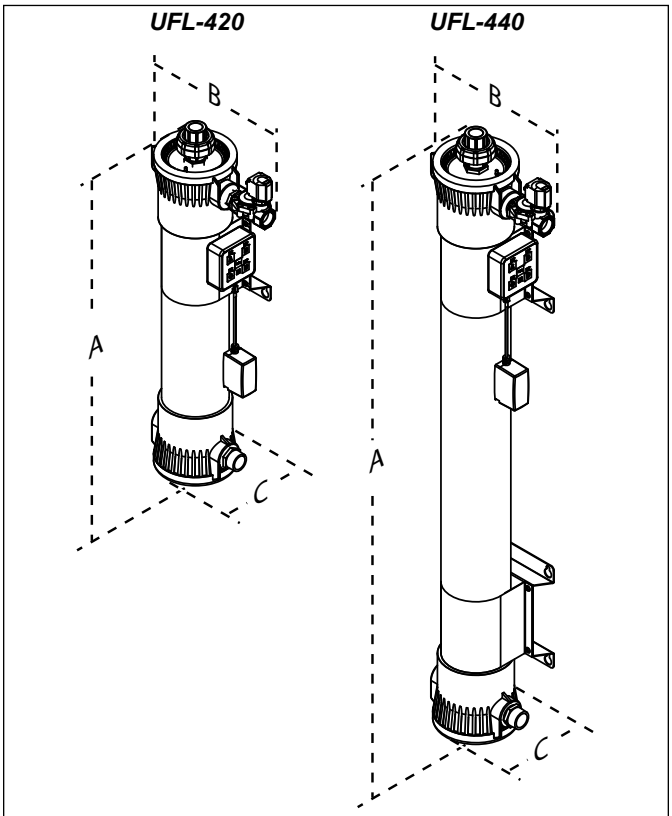
- Read all instructions before using equipment.
- Install or locate the equipment only for its intended use as described in this manual. Do NOT use corrosive chemicals in this equipment.
- Do NOT operate this equipment if it has a damaged cord or plug; if it is not working properly, or if it has been damaged or dropped.
- This equipment should be serviced by qualfied personnel only. Contact Antunes Filtration Technologies for repair.
- Do NOT immerse cord or plug in water.
- Keep cord away from heated surfaces.

The following warnings and cautions appear throughout this manual and should be carefully observed:

- Unplug the power cord before performing any service or maintenance on the unit.
- All electrical connections must be in accordance with local electrical codes and any other applicable codes.
- WARNING ELECTRICAL SHOCK HAZARD. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.
  - Do NOT modify the power supply cord plug. If it does not fit the outlet, have a proper outlet installed by a qualified electrician.
  - Do NOT use an extension cord with this unit.
- If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person.
- This equipment is to be installed to comply with the local plumbing code and any other applicable code.
- Water pressure must not exceed 100 psig (690 kPa). To reduce water pressure, install a water pressure regulator and set water pressure to suit application.
- The trans membrane pressure (inlet water pressure minus the permeate water pressure) must not exceed 45 psi (310 kPa).
- System should be supplied only with cold water.
- Commonwealth of Massachusetts Plumbing Code 248 CMR shall be adhered to. The use of saddle valves are not permitted, please consult your local plumber.
- A ground fault circuit interrupter (GFCI) must be installed on the circuit to this system
- When installed on metallic plumbing, a properly sized electrical bonding jumper must be installed across the inlet and outlet pipes serving this device.

SPECIFICATIONS

Dimensions



Model & Mfg. No.	Height (A)	Width (B)	Depth (C)	Operating Weight
UFL-420 9700465	28” (71 cm)	11.5” (29 cm)	6” (15 cm)	28 lbs. (12.7 kg)
UFL-440 9700475	47” (119 cm)	11.5” (29 cm)	6” (15 cm)	42 lbs. (19 kg)

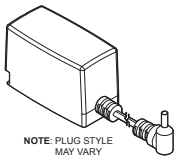
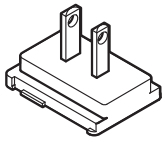
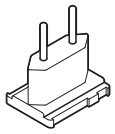
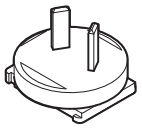
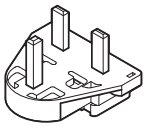
Replacement Cartridges

Replacement Cartridge		Part No.
UFL-420	L-420 Ultra Filter	7000411
UFI-440	L-440 Ultra Filter	7000412

Electrical Ratings

Model & Mfg. No.	Voltage	Watts	Amps	Hertz
UFL-420 9700465	100–240	10	0.4	50/60
UFL-440 9700475	100–240	10	0.4	50/60

Electrical Cord & Plug Configurations

Kit Model Number	Description	Configuration
0012146	DC Power Supply 100 - 240 VAC Includes the 4 plug adaptors below	
	US NEMA 1-15 (2 pin) or NEMA 5-15 (3 Pin)	
	Euro CEE 7/16	
	AS/NZS 3112 AUS (2 Pin)	
	UK BS 1363	

⚠ CAUTION ⚠

All electrical connections must be in accordance with local electrical codes and any other applicable codes.

A ground fault circuit interrupter (GFCI) must be installed on the circuit to this system.

When installed on metallic plumbing, a properly sized electrical bonding jumper must be installed across the inlet and outlet pipes serving this device

SPECIFICATIONS (continued)

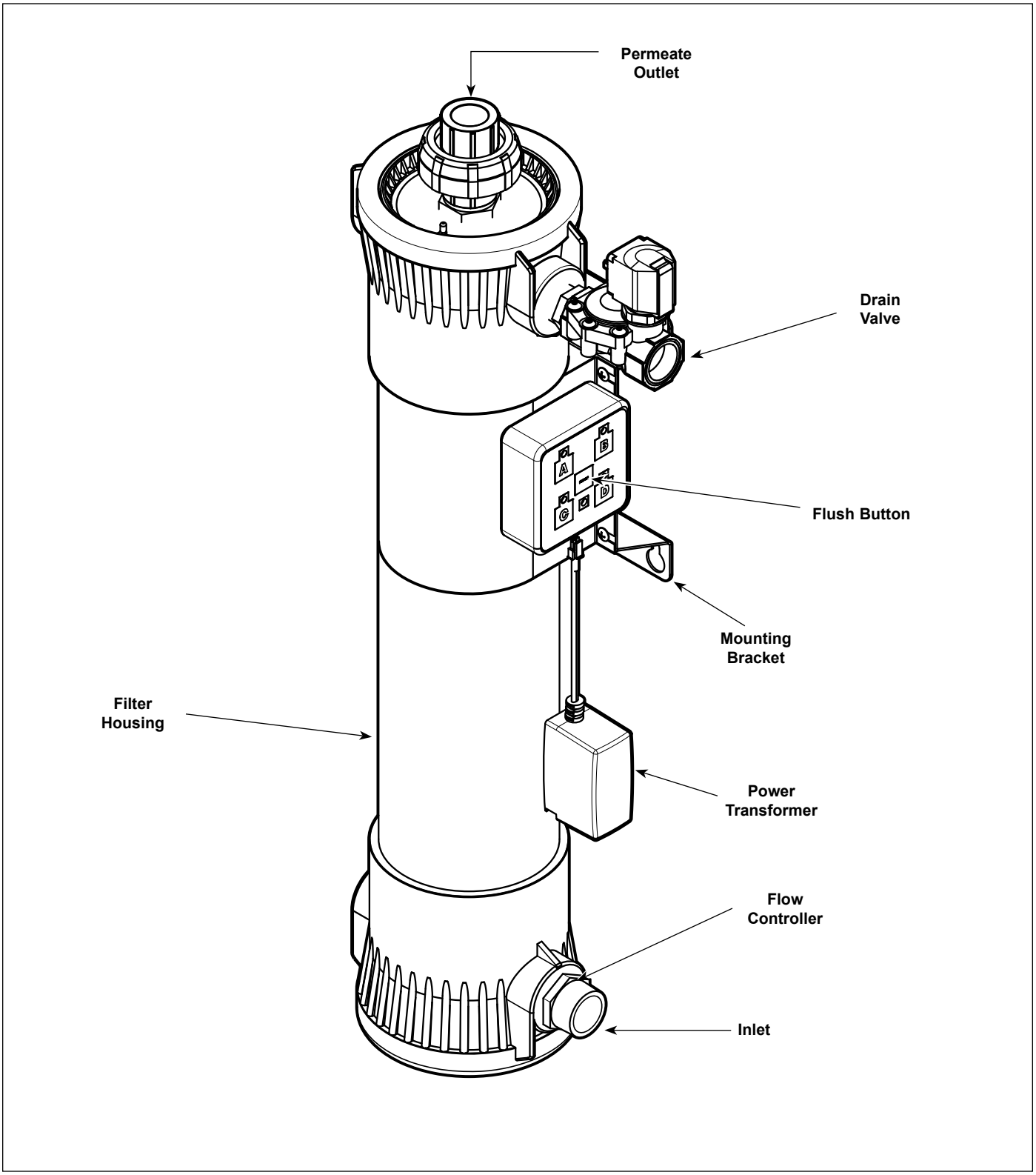


Figure 1. Components

PERFORMANCE DATA SHEET

Ultra Filter Cartridge Capacities

Max.Operating Pressure	100 psig (690 kPa)
Max. Operating Temp.	104°F (40°C)
Min. Operating Temp.	40°F (4°C)
Max. Trans Membrane Pressure	45 psi (3.1 bar)
pH Range	3-10
MWCO	100 kD

System Capacities

Model & Mfg. No.	Capacity Per Min.
UFL-420 9700465	4.6 gal. (17 liters)
UFL-440 9700475	9.2 gal. (35 liters)

System Tested and Certified by NSF International against NSF/ANSI Standard 42 and 53 for the reduction of:

Standard No. 42: Aesthetic Effects
Nominal Particulate Reduction Class I
Standard No. 53: Health Effects
Cyst Reduction
Turbidity Reduction

This system has been tested according to NSF/ANSI Standard 42 and 53 for reduction of the substances listed below. The concentration of the indicated substances in water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system, as specified in NSF/ANSI 42 or 53. While testing was performed under standard laboratory conditions, actual performance may vary.

Performance Claims for Percent Reduction

Substance	Influent Challenge Concentration	Reduction Requirement	Minimum Percent Reduction
cyst[1]	minimum 50,000/L	99.95%	99.95%
Turbidity	11+/1 NTU	≤ 0.5 NTU	97.3%
Particulate Class I Particles 0.5 to < 1μm	at least 10,000 particles /mL	85%	N/A

[1]based on the use of microspheres or *Cryptosporium parvum* oocysts

OVERVIEW

Overview

The UFL system operates in two modes:

- Normal Operation Mode
- Flush Mode

During Normal Operation Mode, water enters the Inlet and flows through the Ultra Filter before exiting the Permeate Outlet as usable product water.

During Flush Mode, the Drain Valve opens and water entering the Inlet flushes and cleans the Ultra Filter membrane by removing any debris collecting on the membrane wall.

The Drain Valve is only powered during Flush Mode.

NOTE: Do NOT unplug the power cord or turn off the system during Flush Mode. If there is a power outage or the system is unplugged, water will continue to be filtered but the system will NOT flush. This could cause the Ultra Filter to plug prematurely and may void the warranty.

The flush is automated by the controller to last 10 seconds and take place in one hour intervals. This interval can be changed (see ***Changing the Interval Setting*** in the Maintenance section of this manual).

⚠ CAUTION ⚠
Changing the flush interval can cause the Ultra Filter to plug prematurely and may void the warranty. Consult the factory for more information.

Manual Flushing

A manual flush can be activated at any time by pressing the **FLUSH** button.

When the **FLUSH** button is pressed, the Flush LED on the controller flashes and the Drain Valve opens for 10 seconds. After flushing is complete, the Drain Valve will close, the Flush LED will stop flashing and the unit will automatically return to Normal Operation Mode.

NOTE: A manual flush will not affect the interval flush setting.

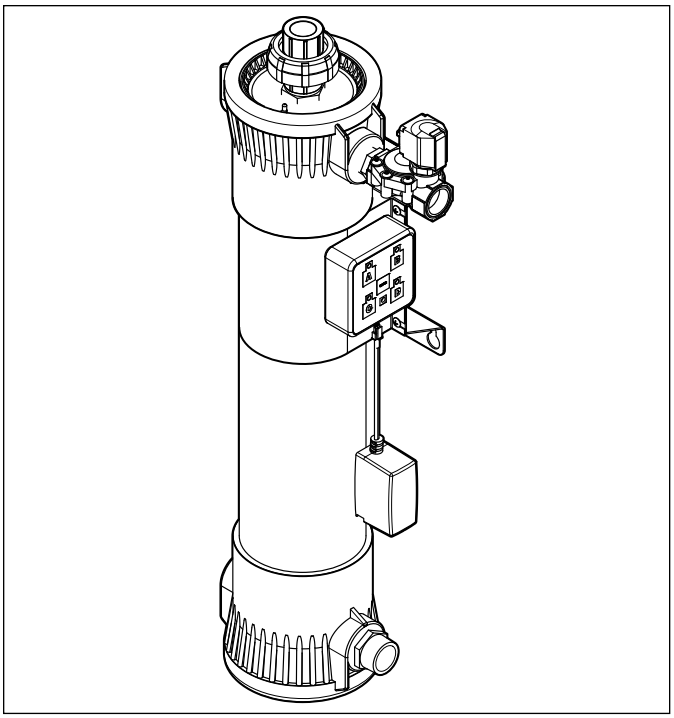


Figure 2. UFL-420 System

INSTALLATION

Unpacking

1. Remove the system and all packing materials from the shipping carton.
2. Remove all packing materials and protective coverings from the system
3. Remove the information packet. To prevent any delay in obtaining warranty coverage, fill out and mail the warranty card.

NOTE: If any parts are damaged, contact Antunes Filtration Technologies IMMEDIATELY at 1-800-253-2991 or 1-630-784-1000.

Equipment Setup

GENERAL

When placing the unit into service, pay attention to the following guidelines:

- Do NOT immerse cord or plug in water.
- Keep cord away from heated surfaces.

SUGGESTED TOOLS AND SUPPLIES FOR INSTALLATION

The following tools and supplies are suggested to make the installation easier:

- Screwdriver
- Drill with bits
- Tape measure
- Two gallon bucket
- Pipe wrenches
- Adjustable wrenches
- Level
- Pipe dope or Teflon® tape
- Fresh 5 1/4% liquid chlorine bleach (such as Clorox®)

ELECTRICAL

Ensure that the line voltage corresponds to the stated voltage on the units specification label. Make sure that the plug on the power cord from the system and the outlet match. For proper operation, and to ensure the highest quality water from the system, make sure that the system is not connected to a switched electrical outlet.

PLUMBING

NOTE: This unit is designed to use tap water not to exceed 100°F (38°C) or 100 psig (690 kPa).

The UFL-420 and UFL-440 systems use the following connections (Figure 1):

- Water Inlet 1” NPT
- Permeate (Product Water) 1” NPT
- Drain 3/4” NPT

When making a plumbing connection to the system, remember to use a back-up wrench on the supporting plumbing. Always use a good quality, approved pipe sealant or Teflon® tape on pipe threads. Be careful not to get the pipe sealant inside the pipe when making the connections.

Do NOT over tighten the connections. It is recommended that plastic fittings be used when connecting to the plastic connections of the system. This will reduce the possibility of cracking the connections due to overtightening.

If soldered plumbing is used, do NOT apply heat to, or near, the filtration system. The use of union (O-ring seal) connections is highly recommended for ease of installation and future servicing.

⚠ IMPORTANT ⚠

Commonwealth of Massachusetts Plumbing Code 248 CMR shall be adhered to. The use of saddle valves are not permitted, please consult your local plumber.

⚠ CAUTION ⚠

This equipment is to be installed to comply with the basic plumbing code of the Building Officials and Code Administrators, Inc. (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration (FDA).

⚠ CAUTION ⚠

Water pressure must not exceed 100 psig (690 kPa). To reduce water pressure, install a water pressure regulator and set water pressure to suit application. Note that the trans membrane pressure must not exceed 45 psi (310 kPa).

INSTALLATION (continued)

Flow Regulator Assembly

Your filtration system uses a water Flow Regulator Assembly that controls the flow of water into the unit. This assembly consists of a white threaded male connector and a color-coded Flow Regulator (Figure 3). The unit **MUST** be operated with the appropriate Flow Regulator Assembly.

- UFL-420 Units: Use a **GREEN** and WHITE Flow Regulator Assembly (5 gallons per minute).
- UFL-440 Units: Use a **BLACK** and WHITE Flow Regulator Assembly (10 gallons per minute).

⚠ CAUTION ⚠

Flow Regulator Assemblies are NOT interchangeable. Operating the system with the wrong Flow Regulator or without a Flow Regulator can damage the system, cause personal injury, and will void the warranty!

Mounting the System

The UFL system comes with a Mounting Bracket to mount the system securely. When mounting the system, pay attention to the following guidelines:

- Note the location of the water supply, drain, and an appropriate electrical outlet when choosing a mounting location.
- Allow sufficient access for cartridge replacement. The UFL-420 system should be mounted with 20 inches below the unit to allow proper access when changing cartridges. The UFL-440 system should be mounted with 40 inches below the unit.
- Mount the system near but NOT above an appropriate electrical outlet.
- Do NOT mount the system above any electrical equipment or items that may be damaged if they get wet.
- Mount the system near a drain for flushing operations.
- Mount the system before all consumable water filtration processes.
- Secure the Mounting Brackets into wall studs or with the appropriate heavy duty mounting hardware.

The system is pre-assembled to Mounting Brackets. The Mounting Brackets have mounting holes secure the bottom of the system to the wall.

Inlet Water Plumbing

The Inlet water plumbing line should be 1” NPT or larger. A shutoff valve (not supplied) should be installed in the line leading to the system. The valve should be mounted close to the system inlet and sized properly for the inlet plumbing line.

An optional “T” or Cross Fitting with cap or plug can be installed between the Inlet Valve and the System Inlet. This fitting can be used for draining and sanitizing the system and downstream plumbing.

The system should only be connected to the cold water line.

Before connecting the fitting to the System Inlet, the plumbing to the system must be flushed clear of all debris. Hold a bucket at the inlet water line and slowly open the Inlet Water Valve. Allow the pipe to flush until all debris is removed.

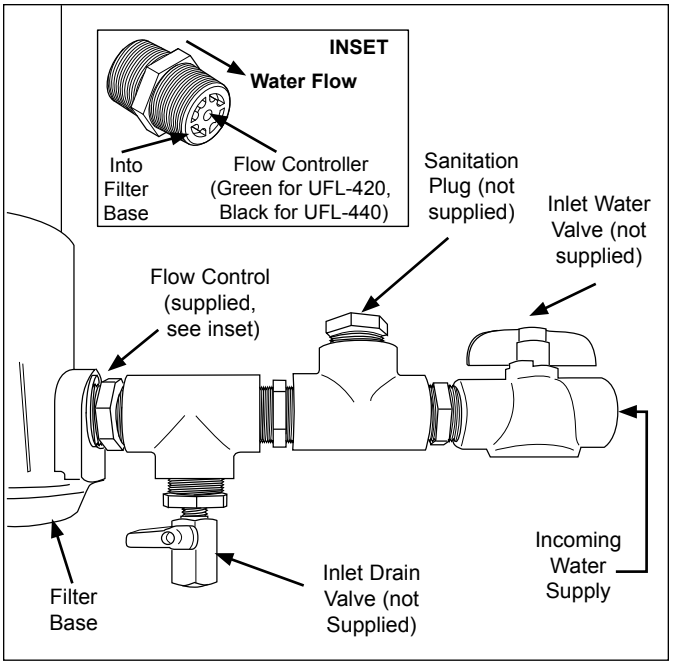


Figure 3. Inlet Water Plumbing

INSTALLATION (continued)

Permeate Line Plumbing

To ensure the highest quality and safest water, it is recommended that a check valve (to prevent backflow) be installed in the water line after the permeate connection. This will help prevent possible contamination of the filter system due to other equipment downstream. The check valve (not supplied) should be mounted close to the system outlet, and sized properly for the plumbing line. Check with local codes for the proper specification.

A shutoff valve (not supplied) should be installed in the filtered water line leading from the system. The valve should be mounted close to the system outlet and sized properly for the plumbing line. This valve will allow for easier servicing and future cartridge replacement.

Drain Valve Connection

The drain hose is for flushing particle buildup out of the system during self cleaning.

1. Cut a length of the provided 20-foot coil of braided tubing so it reaches the drain from the Drain Valve.
2. Connect one end of the hose to the Drain Valve and secure it with a provided Worm Clamp (Figure 4).
3. Direct the other end of the hose to the drain.

When connecting the drain hose, pay attention to the following guidelines:

- The drain line plumbing must be able support the flow rate whenever the system flushes. This flow rate is dependent on the inlet water pressure, inlet pipe size, and system.
- The drain line leading out of the system must be as short as possible and slope downwards without any kinks or loops.
- The drain line plumbing must be position and secured at least 2 inches above the drain (Figure 4). This air gap protects the system from contamination in the event of a backed-up drain.
- The drain used must not be blocked or restricted.
- The drain used must be as large or larger than the drain line plumbing.

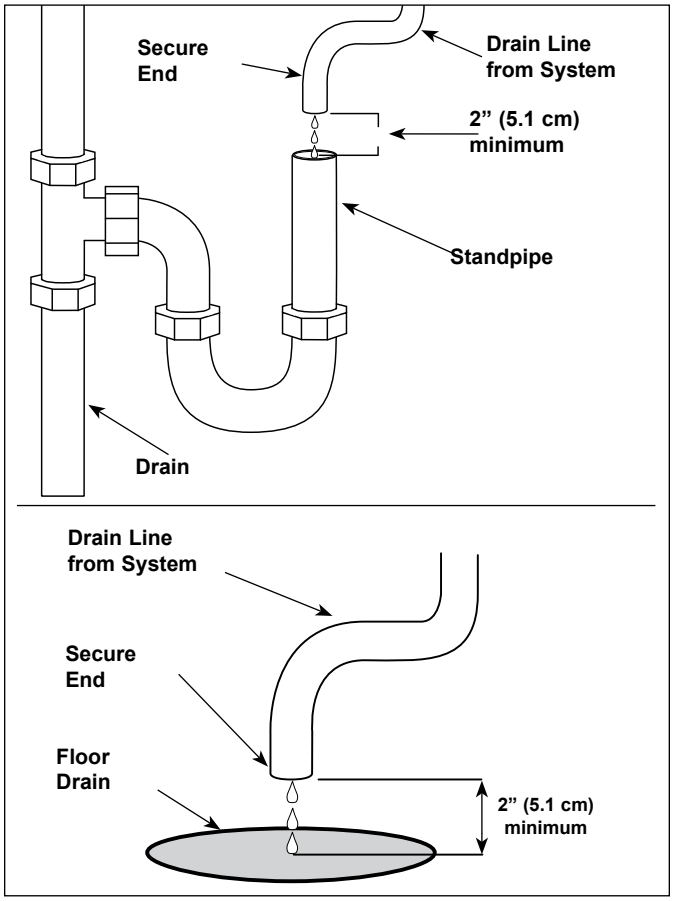


Figure 4. Proper Drain Plumbing

INSTALLATION (continued)

Starting the Controller

1. Select the proper AC plug for your electrical outlet and install it onto the power supply.
2. Plug the appropriate end of the power cord into the controller.
3. Plug the other end of the power cord into the electrical outlet. The LEDs on the controller will light up.
4. The controller automatically enters Flush Mode and the Flush LED starts to flash.
5. When flushing is complete, the Flush LED will stop flashing and one or more LEDs will remain lit, indicating the unit has power and which interval is selected in the controller.

Rinsing the Ultra Filter Cartridge

The Ultra Filter Cartridge must be rinsed before the system is used to remove any air and protective solution.

⚠ CAUTION ⚠

Ingesting the protective solution may cause irritation of the gastrointestinal tract, colic, diarrhea, or other similar symptoms.

1. Direct water from the Permeate Outlet to a drain.
2. Open the tap or faucet closest downstream to the filter system.
3. Slowly open the inlet water valve and allow water to enter the system.
4. Press the **FLUSH** button. The Drain Valve will open and air and water will come out of the drain line. Repeat six times to ensure all air and storage solution are flushed out of the Ultra Filter Cartridge.
5. Allow water to continue to run through the system and out the faucet for 15 minutes.
6. Inspect the unit for any leaks and repair as needed.
7. After 15 minutes with water flow, close the tap or faucet and let the system stand without water flow for 15 minutes to allow trapped air to come out of the hollow fibers of the Ultra Filter Cartridge.
8. After 15 minutes without water flow, open the tap or faucet for five minutes to flush out the trapped air.
9. Close the tap or faucet.
10. Press the **FLUSH** button to open the Drain Valve. Repeat six times to ensure any remaining air is flushed out of the system.

INSTALLATION (continued)

Sanitizing the System and Lines

The plumbing must be sanitized to eliminate possible contamination that may have occurred during the installation process.

One ounce (30 ml) of liquid chlorine bleach (regular bleach, unscented 6% sodium hypochlorite) can be used to sanitize the plumbing. The amount of bleach needed depends on the system and the amount of plumbing downstream of the system.

NOTE: Follow the handling and safety instructions supplied with the bleach.

1. Follow the steps in the ***Rinsing the Ultra Filter Cartridge*** in the Installation section of this manual.
2. Turn off the water to the system.
3. Open the faucet or tap closest downstream to the system.
4. Close the Inlet Water Valve and allow the system to depressurize.
5. Place a bucket under the “T” or cross fitting at the inlet connection to the system. Open the inlet drain valve or unscrew the cap to drain the system.
6. Press the **FLUSH** button to help drain the system.
7. When the water flow out of the inlet fitting stops, close the inlet drain valve and pour the liquid bleach into the inlet connection fitting. Be careful not to spill bleach onto clothing or skin. You may want to add the bleach using a cup. Reattach the cap on the fitting.
8. Slowly open the inlet water valve and allow water to flow out of the tap until the smell of bleach is present.
9. Immediately close the tap and let the system stand with no water flow for at least 15 minutes to allow the bleach to sanitize the pipes.
10. After 15 minutes without water flow, open the tap and flush until the presence of bleach is gone. All other taps should be opened to flush any bleach from the plumbing. Close the taps.
11. Press the **FLUSH** button to complete the flushing process.

⚠ IMPORTANT ⚠

Commonwealth of Massachusetts Plumbing Code 248 CMR shall be adhered to. The use of saddle valves are not permitted, please consult your local plumber.

⚠ CAUTION ⚠

Ingesting the protective solution may cause irritation of the gastrointestinal tract, colic, diarrhea, or other similar symptoms

MAINTENANCE

Replacing the Ultra Filter Cartridge

1. Turn off water to the system by closing the inlet valve.
2. Press the **FLUSH** button to flush the system and relieve pressure. Repeat several times.
3. Place a bucket under the “T” or cross fitting at the inlet connection to the system. Open the valve or unscrew the cap to drain the system.

NOTE: Make sure there is enough room next to the system to remove the cartridge.

4. Close the inlet drain valve or reattach the cap on the “T” fitting when the water flow stops.
5. Unplug the system.
6. Remove the Snap Ring from the Ultra Filter Housing. Grab the raised lug with a pair of pliers and pull towards the center of the End Cap and away. The Snap Ring should lift out of its groove.
7. Remove the End Cap, End Cap O-ring, and Cartridge from the housing (Figure 5).

NOTE: If the Cartridge does not easily come out of the Housing, remove the opposite End Cap for assistance.

8. Inspect the Large End Cap O-rings and End Cap O-ring for nicks or cuts. Replace as needed.
9. Lubricate all O-rings with a food-grade silicone lubricant. Apply a light coating of lubricant to the inside center tube at both ends of the new cartridge.
10. Record the serial number of the new cartridge. The cartridge serial number is engraved on one end of the outer tube (for example: 05K 12013).
11. Install the End Cap O-ring on the End Cap and insert the Large End Cap into the end of the new cartridge.
12. Position the new cartridge and End Cap at the housing and gently insert into the housing.
13. Press the End Cap into position until it is fully seated and the Snap Ring groove is visible.
14. Install the Snap Ring by guiding the non-lugged end into the groove first, pushing outward and working around the ring until it snaps into place.

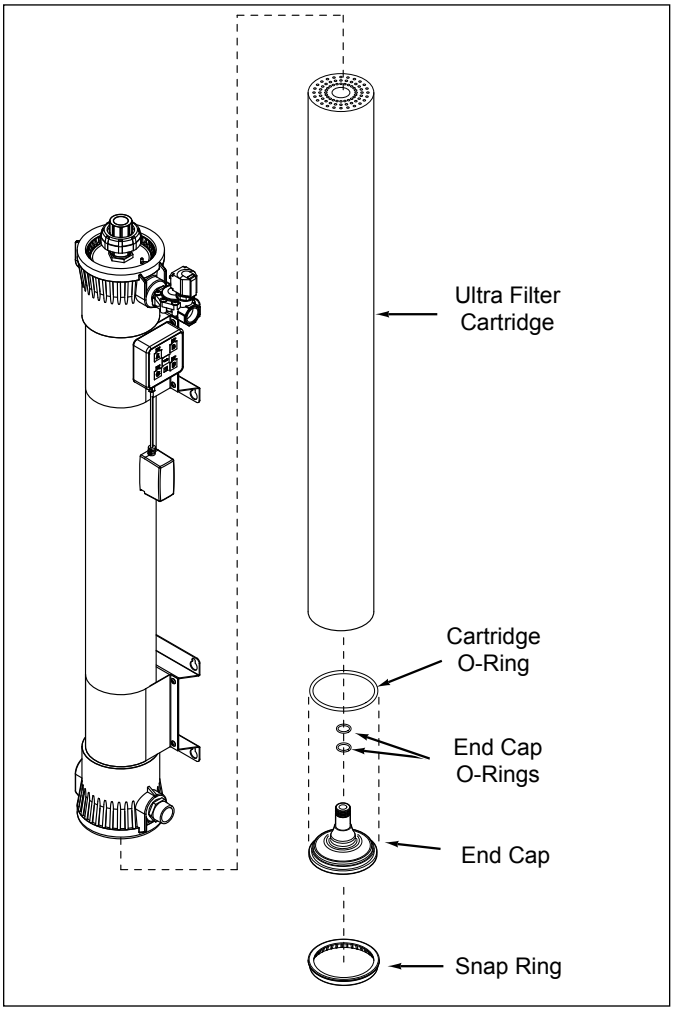


Figure 5. Replacing the Ultra Filter Cartridge

NOTE: Make sure that the Snap Ring is fully seated before turning the water on.

15. Rinse the new Ultra Filter Cartridge before placing the system back into operation. Follow the ***Rinsing the Ultra Filter Cartridge*** and ***Sanitizing the System and Lines*** procedures in the Installation section of this manual to complete the cartridge change.
16. When rinsing is complete, repressurize the system.

System Sanitization

The system and downstream plumbing should be sanitized at least once a year. When necessary, follow the procedure in ***Sanitizing the System and Lines*** in the Installation section of this manual.

MAINTENANCE (continued)

Changing the Interval Setting

⚠ CAUTION ⚠

Changing the flush interval can cause the Ultra Filter to plug prematurely and may void the warranty. Consult the factory for more information.

Though not recommended, the Interval Setting on the controller can be changed. If the setting must be changed, use the chart below. Press and hold the corresponding button. After 5 seconds, the Button LED will turn on. After 10 seconds, the Flush LED will also turn on.

Flush Interval	Button	Hold Time	Button LED	Flush LED
15 minutes	A	10 seconds	On	On
30 minutes	B	10 seconds	On	On
45 minutes	C	10 seconds	On	On
1 hour	A	5 seconds	On	Off
4 hour	B	5 seconds	On	Off
6 hours	C	5 seconds	On	Off
12 hours	D	5 seconds	On	Off
24 hours	D	10 seconds	On	On

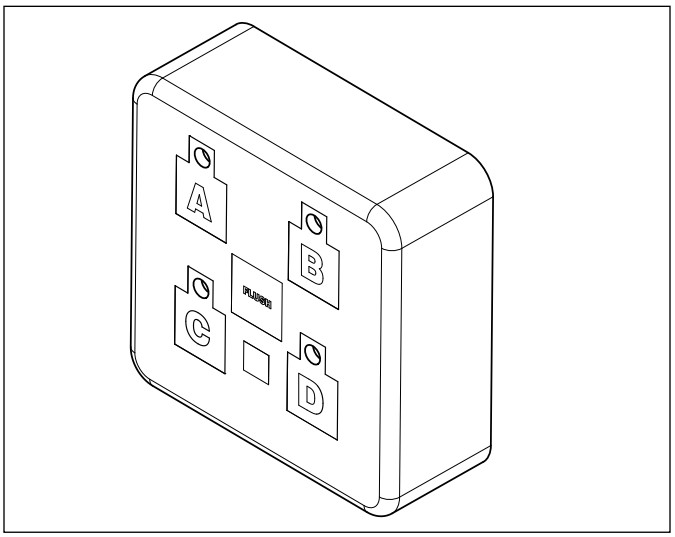


Figure 6. Controller

Resetting the Timer Program

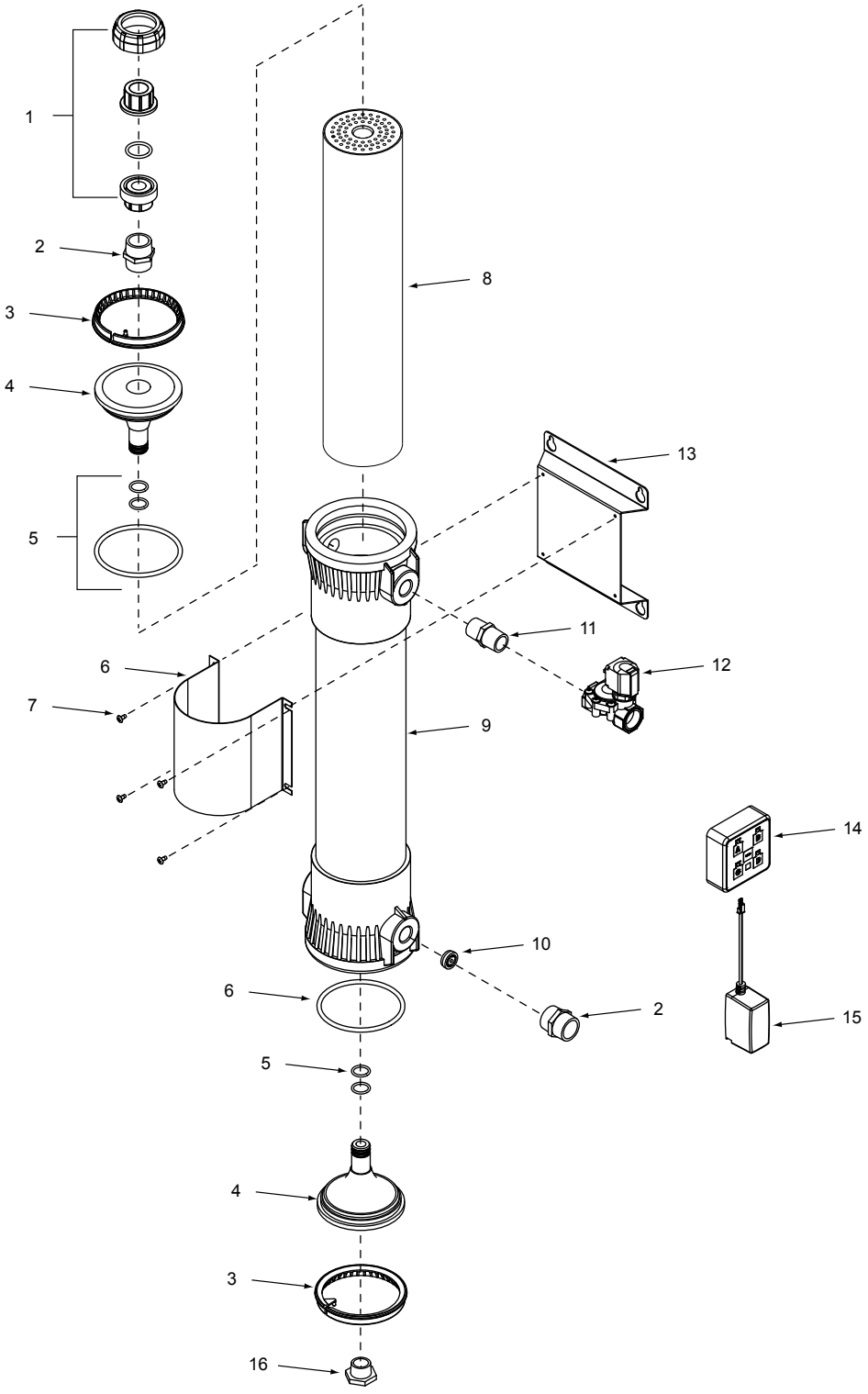
During the normal operation, the system will flush according to the set interval. It is possible the system will flush at a time of high water use. If this poses a problem, the controller can be reset. Unplug the power supply, wait for 5 seconds, and then plug the power supply in. When power is restored to the controller, it will automatically enter Flush Mode. The controller will then begin timing from the point when power is restored based on the interval setting selected.

TROUBLESHOOTING

Problem	Possible Cause	Corrective Action
Unit does not have power.	The power cord is not correctly plugged in.	Plug power cord in correctly.
The Control Display is blank.	The power cord is not correctly plugged in.	Plug power cord in correctly.
	Control Board is inoperable.	Contact your maintenance person or Authorized Service agency.
	Transformer is inoperable.	
No water comes out of the filter system	Inlet Valve closed	Open the Inlet Valve
	Inlet Strainer is plugged	Clean/replace Inlet Strainer
	End of the capillaries plugged	Clean/replace Filter Cartridge
Low water flow/pressure out of system	See above.	See above.
	The system may be in a flush cycle.	Wait for the flush cycle to end.
	Flushing program not set correctly for water conditions.	Decrease the flush interval (refer to the Operation section of this manual).
	Drain Valve is stuck open.	Replace/rebuild the Drain Valve.
	The inlet water pressure is too low.	Boost the inlet water pressure/replace pipes.
Water tastes bad.	Storage/shipping solution not completely rinsed out of system.	Rinse system for a longer period of time.
	Biological growth in pipes.	Sanitize plumbing.
	Water conditions changed.	Consider installing taste and odor filtration.
	Broken capillary in Filter Cartridge.	Replace Filter Cartridge.
Flush runs continuously.	Drain Valve stuck open.	Replace/rebuild the Drain Valve.
	Controller sending continuous signal to valve.	Replace the controller.
Flush occurs at time of high water usage.	The Flush Interval is set to interfere with water use.	Change Flush Interval. Unplug unit and plug in at a time of lower water usage.
Water splashes at drain during flush.	Drain line not positioned properly.	Reposition the end of the drain line.
Water leaks at the ends of the Filter Cartridge after changing cartridges.	Cartridge end connections are not tight enough.	Tighten with wrench if necessary.
	O-rings not lubricated.	Lubricate O-rings with food-grade lubricant.
	O-rings are split, cut, or twisted	Replace O-rings.
Water leaks from Permeate port.	Permeate port is not tight enough	Tighten, with wrench if necessary.
	O-ring not lubricated.	Lubricate O-ring with food-grade lubricant.
	O-ring split, cut, or twisted.	Replace O-ring.
Water leaks from system fitting or connection.	Fitting broken or loose.	Retighten or replace the fitting.
	Not enough pipe thread sealant used.	Redo the fitting with the proper amount of sealant.

REPLACEMENT PARTS

Replacement Parts can be purchased from an authorized dealer. Contact Antunes Filtration Technologies at 1-630-754-1000 or toll free in the United States at 1-800-253-2991



REPLACEMENT PARTS (continued)

Replacement Parts can be purchased from an authorized dealer. Contact Antunes Filtration Technologies at 1-630-754-1000 or toll free in the United States at 1-800-253-2991

Item	Part No.	Description	Qty.
1	2190150	Union Adaptor, 1” NPT	1
2	2190147	Nipple, Hex 1” NPT	2
3	2180181	Ring, Lock	2
4	2180228	Cap, End 1” Port	2
5	7000413	O-Ring Replacement Kit	1
	0200235	O-Ring, End Cap	2
	0200236	O-Ring, Cartridge	4
	2140153	Lubricant, High Vacuum Grease	1
6	0504065	Clamp, 4” Filter	1
7	3080157	Screw, Tap 8-32 x 3/8” Lg.	4
8	7000411	Cartridge Replacement Kit UFL-420 (Includes O-Ring Replacement Kit)	1
	7000412	Cartridge Replacement Kit UFL-440 (Includes O-Ring Replacement Kit)	1

Item	Part No.	Description	Qty.
9	2180201	Filter Housing, UFL-420	1
	2180202	Filter Housing, UFL-440	1
10	0021338	5 GPM Flow Reg. Assy, UFL-420	1
	0021337	10 GPM Flow Reg. Assy, UFL-440	1
11	2070117	Nipple, 3/4” NPT	1
12	4040189	Solenoid Valve, NC 3/4” NPT	1
13	0504279	Bracket, Mounting	1
14	0012357	Universal Pulse Controller	1
15	0012146	Power Adapter Assembly	1
16	2190148	Plug, Pipe 1” NPT	1
17*	2140158	Cord, Loctite Thread Sealing	1
18*	0700769	Wire Harness	1

**not shown*

NOTES

LIMITED WARRANTY

Equipment manufactured by Antunes Filtration Technologies, a Division of A.J. Antunes & Co., has been constructed of the finest materials available and manufactured to highest quality standards. These units are warranted to be free from defects in material and workmanship for a period of on year from date of purchase under normal use and service, and when installed in accordance with the manufacturer's recommendations.* The ultra filtration membrane cartridge is warranted under the same terms and conditions on a pro rated basis for 24 months form date of purchase.

*To ensure continued proper operation of the units, follow the maintenance procedure outlined in the Owner's Manual.

1. This warranty does not cover failures due to improper system installation, defects caused by improper storage or handling prior to placing of the equipment into service.* This warranty does not include overtime charges or work done by unauthorized service agencies or personnel. This warranty does not cover normal maintenance, calibration, or regular adjustments as specified in operating and maintenance instructions of this manual, and/or labor involved in moving adjacent objects to gain access to the Equipment.
2. Antunes Filtration Technologies reserves the right to make changes in design or add any improvements on any product. The right is always reserved to modify equipment because of factors beyond our control and government regulations. Changes to update equipment do not constitute a warranty charge.
3. **If shipment is damaged in transit, the purchaser should make a claim directly upon the carrier. Careful inspection should be made of the shipment as soon as it arrives and visible damage should be noted upon the carrier's documentation. Damage should be reported to the carrier. This damage is not covered under this warranty.**
4. THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EACH OF WHICH IS HEREBY EXPRESSLY DISCLAIMED. THE REMEDIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN NO EVENT SHALL ANTUNES FILTRATION TECHNOLOGIES BE LIABLE FOR SPECIAL CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR THE BREACH OR DELAY IN PERFORMANCE OF THIS WARRANTY.

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